

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claim 1 (Currently Amended) A tissue comprising linkers bonded to the tissue and a bridge molecule bridges bonded between two or more of the linkers, wherein the linkers and the bridges are chemically different, and the functional groups of the bridges are generally non-reactive with other bridges.

Claim 2 (Original) The tissue of claim 1 wherein the tissue comprises extracellular matrix selected from the group consisting of collagenous fibrils, GAG and elastin.

Claim 3 (Original) The tissue of claim 1 wherein the two linkers and the bridge bonded between the two linkers span a distance of between about 10 Angstroms and about 100 Angstroms.

Claim 4 (Original) The tissue of claim 1 wherein the two linkers and the bridge bonded between the two linkers span a distance of between about 15 Angstroms and about 50 Angstroms.

Claim 5 (Original) The tissue of claim 1 wherein the bridge is a single molecule.

Claim 6 (Original) The tissue of claim 1 wherein the bridge is reactive with modified tissue.

Claim 7 (Original) The tissue of claim 1 wherein the bridge comprises functional groups selected from the group consisting of methylthio, thio, amine, alcohol, carboxyl and combinations thereof.

Claim 8 (Original) The tissue of claim 1 wherein the bridge comprises a hydrocarbon backbone.

Claim 9 (Original) The tissue of claim 1 wherein the linkers comprise monomers, dimers and oligomers.

Claim 10 (Cancelled)

Claim 11 (Original) The tissue of claim 1 wherein the linkers comprise functional groups selected from the group consisting of aldehydes, epoxies, imide groups, photooxidative groups, enzymatically oxidative groups and combinations thereof.

Claim 12 (Original) The tissue of claim 1 wherein the linkers comprise crosslinking agents.

Claim 13 (Original) The tissue of claim 1 wherein the linker is selected from the group consisting of glutaraldehyde, triglycidyl amine and epoxy.

Claim 14 (Original) The tissue of claim 1 wherein a bioprosthetic device comprises the tissue.

Claim 15 (Original) The tissue of claim 14 wherein the bioprosthetic device is a heart valve prosthesis.

Claim 16 (Currently Amended) A method of crosslinking tissue comprising treating the tissue with a linker composition comprising linkers and a bridge composition comprising bridges wherein the linkers bond to the tissue and the bridges bond between two of the linkers, wherein the bridges and the linkers are chemically different, and the functional groups of the bridges are generally non-reactive with other bridges.

Claim 17 (Original) The method of claim 16 wherein the tissue comprises proteins.

Claim 18 (Original) The method of claim 16 wherein the tissue is treated with the linker composition and the bridge composition simultaneously.

Claim 19 (Original) The method of claim 16 wherein the tissue is treated with the linker composition prior to addition of the bridge composition.

Claim 20 (Original) The method of claim 16 wherein the linker composition and the bridge composition are combined prior to treating the tissue.

Claim 21 (Original) The method of claim 16 wherein the linker composition comprises crosslinking agents.

Claim 22 (Currently Amended) The method of claim 16 wherein the concentration of the linkers in the linker composition is between about 0.0001 molar and about 1 molar.

Claim 23 (Original) The method of claim 16 wherein the concentration of the bridges in the bridge composition is between about 1×10^{-7} molar and about 1 molar.

Claim 24 (Original) The method of claim 16 wherein the tissue is treated with the linker composition and the bridge composition for between about 10 minutes and about one month.

Claim 25 (Original) The method of claim 16 wherein the tissue is treated with the linker composition and the bridge composition for between about 10 minutes and about 2 weeks.

Claim 26 (Original) The method of claim 16 wherein the bridges comprise multiple functional groups.

Claim 27 (Original) The method of claim 16 wherein the treatment of the tissue further comprises exposing the tissue to activators.

Claim 28 (Original) The method of claim 27 wherein the activators are selected from the group consisting of ultraviolet light, visible light and enzymes.

Claims 29-33 (Cancelled)

Claim 34 (Currently Amended) A tissue comprising modified sites and bridge molecules, wherein said bridge molecules are bonded to two or more modified sites in the tissue, and the functional groups of the bridge molecules bridges are generally non-reactive with other bridge molecules bridges.

Claim 35 (Original) The tissue of claim 34 wherein the modified sites comprise aldehyde groups.

Claim 36 (Currently Amended) A method of crosslinking tissue having modified sites comprising treating said tissue with a bridge composition comprising bridge molecules, wherein the bridge molecules bond to two or more modified sites in the tissue, and the functional groups of the bridge molecules bridges are generally non-reactive with other bridge molecules bridges.

Claim 37 (Original) The method of claim 36 wherein the modified sites comprises aldehyde groups.

Claim 38 (Previously Presented) The tissue of claim 34 wherein said bridge molecules comprise functional groups selected from the group consisting of methylthio, amine, alcohol, carboxyl and combinations thereof.

Claim 39 (Previously Presented) The tissue of claim 34 wherein said bridge molecules are substantially non-reactive to tissues having no modified sites.

Claim 40 (Previously Presented) The tissue of claim 34 wherein said bridge molecules comprise functional groups located at opposite ends of said bridge molecules.

Claim 41 (Previously Presented) The method of claim 36 wherein said

bridge molecules comprise functional groups selected from the group consisting of methylthio, amine, alcohol, carboxyl and combinations thereof.

Claim 42 (Currently Amended) The method of claim 36 wherein said bridge molecules comprise a functional groups located at opposite ends of said bridge molecules.

Claim 43 (Previously Presented) The tissue of claim 1 wherein said bridge molecules are substantially non-reactive to tissues having no modified sites.